

WHAT IS CLAIMED IS:

- 1 1. A container, comprising:
 - 2 a container body including a cooling core body having a super-coolable
 - 3 composition disposed within a core cavity of the cooling core body,
 - 4 wherein the core body defines a container cavity for having articles
 - 5 disposed therein; and
 - 6 an insulated container cover mountable on the container body and capable
 - 7 of covering the container cavity.
- 1 2. The container of claim 1 wherein:
 - 2 the cooling core body includes a first cooling core shell and a second
 - 3 cooling core shell attached to the first cooling core shell; and
 - 4 the core cavity is defined between the a first cooling core shell and the
 - 5 second cooling core shell.
- 1 3. The container of claim 2, further comprising:
 - 2 a cooling member disposed within the core cavity and essentially
 - 3 encapsulated within the super-coolable composition.
- 1 4. The container of claim 1, further comprising:
 - 2 a cooling member disposed within the core cavity and essentially
 - 3 encapsulated within the super-coolable composition.
- 1 5. The container of claim 4 wherein the cooling member includes a plurality of
- 2 cooling member segments.
- 1 6. The container of claim 4 wherein the cooling member is a multi-pass cooling
- 2 member.

- 1 7. The container of claim 4 wherein the cooling member includes a first cooling
- 2 member coupling and a second cooling member coupling.

- 1 8. The container of claim 1, further comprising:
2 an insulating shell having the cooling core body disposed therein.

- 1 9. The container of claim 1, further comprising:
2 an insulating insert disposed within the cooling core body.

- 1 10. The container of claim 9 wherein:
2 the cooling core body includes a first cooling core shell and a second
3 cooling core shell attached to the first cooling core shell; and
4 the core cavity is defined between the first cooling core shell and the
5 insulating shell.

- 1 11. The container of claim 10, further comprising:
2 a cooling member disposed within the core cavity and essentially
3 encapsulated within the super-coolable composition.

- 1 12. The container of claim 1, wherein the super-coolable composition is made by
2 a process comprising:
3 forming a first mixture including water and ethanol, wherein the first
4 mixture has a first pH level;
5 adjusting the pH level of the first mixture to have a second pH level
6 different than the first pH level; and
7 combining a water-soluble binding agent with the first mixture to form a
8 second mixture.

- 1 13. A cooling core assembly, comprising:
 - 2 a cooling core body having a core cavity therein;
 - 3 a cooling member disposed in the core cavity; and
 - 4 a super-coolable composition disposed within the core cavity, the super-
 - 5 coolable composition encapsulating at least a portion of the cooling
 - 6 member.
- 1 14. The cooling core assembly of claim 13 wherein:
 - 2 the cooling core body includes a first cooling core shell and a second
 - 3 cooling core shell attached to the first cooling core shell; and
 - 4 the core cavity is defined between the a first cooling core shell and the
 - 5 second cooling core shell.
- 1 15. The cooling core assembly of claim 13 wherein the cooling member includes a
- 2 plurality of cooling member segments.
- 1 16. The cooling core assembly of claim 15 wherein the cooling member is a multi-
- 2 pass cooling member.
- 1 17. The cooling core assembly of claim 13 wherein the cooling member includes a
- 2 first cooling member coupling and a second cooling member coupling.
- 1 18. The cooling core assembly of claim 13, further comprising:
 - 2 an insulating shell substantially encompassing an exterior surface of the
 - 3 cooling core body.
- 1 19. The cooling core assembly of claim 13, further comprising:

2 an insulating insert substantially encompassing an interior surface of the
3 cooling core body.

1 20. The cooling core assembly of claim 13, wherein the super-coolable
2 composition is made by a process comprising:
3 forming a first mixture including water and ethanol, wherein the first
4 mixture has a first pH level;
5 adjusting the pH level of the first mixture to have a second pH level
6 different than the first pH level; and
7 combining a water-soluble binding agent with the first mixture to form a
8 second mixture.

1 21. A process for super-cooling a super-coolable composition of an article, the
2 process comprising:
3 attaching a cooling member of an article to a cooling unit of a cooling
4 apparatus capable of super-cooling a cooling fluid, where in the
5 cooling member is encapsulated within a super-coolable composition
6 in a cooling core body of the article;
7 facilitating super-cooling of a cooling fluid within a tank of the cooling
8 unit; and
9 circulating the cooling fluid through the cooling member after the cooling
10 fluid achieves a prescribed super-cooled state.

1 22. The process of claim 21 wherein facilitating super-cooling of a cooling fluid
2 includes cooling the cooling fluid to a temperature of between about -20
3 degrees centigrade and -30 degrees centigrade.

1 23. The process of claim 21 wherein facilitating super-cooling of a cooling fluid
2 includes:
3 circulating the cooling fluid through a circulator immersed in the cooling
4 fluid; and
5 passing the cooling fluid through a heat exchanging coil.

1 24. The process of claim 21 wherein attaching the cooling member of the article to
2 the cooling apparatus includes attaching the cooling member to a pump of a
3 cooling unit.

1 25. The process of claim 24 wherein circulating the cooling fluid through the
2 cooling member after the cooling fluid achieves a prescribed super-cooled
3 state includes pumping the cooling fluid, via the pump, from the tank through
4 the cooling member and back to the tank.

- 1 26. The process of claim 24, further comprising:
- 2 adjusting the velocity at which the cooling fluid is circulated through the
- 3 cooling member to maintain a desired cooling fluid flow condition.